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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/949,988 10/14/97 YUNG

K PD-96315

EXAMINER

PM82/0328

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DIN, T
ART UNIT PAPER NUMBER

3644
DATE MAILED:

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03/28/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/949,988

Applicant
Yung et al

Examiner
T. Dinh

Group Art Unit
3644



☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-21 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-21 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Draim in view of Westerlund.

Draim discloses that a satellite constellations covering a specific geographical area at a predetermined local peak time is well known but is silent on the tilting the trajectory to reorient the constellations to cover a second coverage. However, Westerlund teaches that tilting satellites to "reorient" the satellite constellation to cover various geographical areas are well known in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have tilted the trajectory of certain satellite(s) in the constellations of Draim as taught by Westerlund to maximize the coverage area of the second desired geographical area at predetermined local peak times to satisfy coverage demand.

As for the determining the "period of rotation" and determining the time coverage of the constellation based on the period of rotation and the trajectory of the desired satellite, please note

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that these are inherent steps that one skilled in the art would take so that the desired positions of the satellite can be accomplished to prevent the satellite from being lost and to maximize the coverage.

As for the programming of the computers on the satellite or sending command signals to the satellite and using simulations, please note that in today's day and age, these topics are well known to be used in the aerospace field.

As for the equations and the rotation matrices, please note that these are basic, inherent equations that one skilled in the art would have used to determine the period of rotations.

As for the limitation of a "second coverage based on the time dependent coverage....", please note that when a second coverage is desired by tilting the trajectories of the satellites, the relative orbit of the satellite with respect to each other is not changed since the tilt of the orbits of each satellite mirror each other. Also, the second coverage based on the time dependent coverage is an inherent step that one skilled in the art would have utilized so that the satellite can provide maximum coverage at certain times and locations. Satellites are expensive items therefore, one skilled in the art would have used inherent, rational steps to ensure that the satellite correctly do its job.

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Response to Amendment

In response to applicant's argument on the Draim reference's continuous coverage, the Examiner respectfully disagree. A continuous coverage of an area at all times by Draim's system is considered to be coverage of geographic locations at local peak times. This clearly meets what has been claimed. Furthermore, Westerlund is used to teach that tilting satellites to cover other "local area" is well known in the art. Thus, it would have been obvious to one skilled in the art at the time the invention was made to have tilted the satellite(s) of Draim to cover a different "local area" at local peak time to satisfy coverage demand. Please note that tilting the satellite(s) of Draim as taught by Westerlund to cover a different "local area" at local peak time is inherent, since local peak time is the period of time in which the satellite(s) must be at a "local area" to satisfy the coverage demand. Why would one skilled in the art want to tilt a satellite to a location when no coverage is needed? In conclusion, Draim as taught by Westerlund teaches coverage of an area at peak time.

As for the argument on the Westerlund reference, please note that the Westerlund teaches tilting the satellite to cover a "local area" is well known in the art (see figure 7A). The applicant's argument on page 7 concerning column 7, lines 20-24 is noted and taken into consideration. However, the Examiner believes that this part of the specification does not refute the fact that Westerlund teaches tilting a satellite to cover a different local area (please see the abstract, too).

The Dulck and Uphoff references have been dropped.

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Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Geier, Diekelman, and Haworth disclose satellite constellation to cover an area that is inherently at "peak time".

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tien Dinh whose telephone number is (703) 308-2798. The examiner can normally be reached on Monday thru Friday from 8 A.M. to 5 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, C. Jordan, can be reached on (703) 306-4159.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1113.

T. Dinh

March 22, 2001

T. Dinh
3/24/01